

Appln. No. 10/617,285
Amdt. Dated April 20, 2005
Reply to Office Action of October 21, 2004

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) An image forming apparatus for forming an image on a recording medium by discharging ink from ink-discharge openings, comprising: a print head including ink-discharge surfaces having the ink-discharge openings formed therein; a cylindrical cleaning member composed of an elastic material; moving means for moving effecting relative motion between the cleaning member and the print head ~~relative to each other~~ while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces of the print head; drive control means for controlling the moving means; a cap member for protecting the ink-discharge surfaces of the print head; and cap opening/closing means for opening and closing the cap member, wherein, when the cap member is opened by the cap opening/closing means, by driving the moving means with control of the drive control means so as to ~~move~~ effect relative motion between the cleaning member and the print head ~~relative to each other~~ while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces, ink in the ink-discharge openings is sucked.

2. (Currently Amended) An image forming apparatus for forming an image on a recording medium by discharging ink from ink-discharge openings, comprising: a print head including ink-discharge surfaces having the ink-discharge openings formed therein; a cylindrical cleaning member composed of an elastic material; moving means for moving effecting relative motion between the cleaning member and the print head ~~relative to each other~~ while

Appln. No. 10/617,285
Amdt. Dated April 20, 2005
Reply to Office Action of October 21, 2004

keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces of the print head; drive control means for controlling the moving means; discharge control means for controlling a discharge operation of ink from the ink-discharge openings formed in the discharge surfaces; a cap member for protecting the ink-discharge surfaces of the print head; and cap opening/closing means for opening and closing the cap member, wherein, when the cap member is opened by the cap opening/closing means, by driving the moving means with control of the drive control means so as to ~~move~~ effect relative motion between the cleaning member and the print head ~~relative to each other~~ while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces, ink in the ink-discharge openings is sucked, and after the moving of the cleaning member on the ink-discharge surfaces, ink is preliminarily discharged from the ink-discharge openings with control of the discharge control means.

3. (Currently Amended) An image forming apparatus for forming an image on a recording medium by discharging ink from ink-discharge openings, comprising: a print head including ink-discharge surfaces having the ink-discharge openings formed therein; a cylindrical cleaning member composed of an elastic material; moving means for ~~moving~~ effecting relative motion between the cleaning member and the print head ~~relative to each other~~ while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces of the print head; drive control means for controlling the moving means; discharge control means for controlling a discharge operation of ink from the ink-discharge openings formed in the discharge surfaces; a cap member for protecting the ink-discharge surfaces of

Appln. No. 10/617,285
Amdt. Dated April 20, 2005
Reply to Office Action of October 21, 2004

the print head; and cap opening/closing means for opening and closing the cap member, wherein, when the cap member is opened by the cap opening/closing means, by performing a discharge operation of ink from the ink-discharge openings with control of the discharge control means, ink is preliminarily discharged from the ink-discharge openings.

4. (Currently Amended) An image forming apparatus for forming an image on a recording medium by discharging ink from ink-discharge openings, comprising: a print head including ink-discharge surfaces having the ink-discharge openings formed therein; a cylindrical cleaning member composed of an elastic material; a cap member for housing the cleaning member therein and for protecting the ink-discharge surfaces of the print head; cap opening/closing means for opening and closing the cap member and for moving effecting relative motion between the cleaning member and the print head ~~relative to each other~~ in accordance with the opening operation of the cap member while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces of the print head; and drive control means for controlling the cap opening/closing means, wherein, when the cap member is opened by the cap opening/closing means, by driving the cap opening/closing means with control of the drive control means so as to ~~move effect relative motion between~~ the cleaning member and the print head ~~relative to each other~~ while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces, ink in the ink-discharge openings is sucked.

Appln. No. 10/617,285
Amdt. Dated April 20, 2005
Reply to Office Action of October 21, 2004

5. (Currently Amended) An image forming apparatus for forming an image on a recording medium by discharging ink from ink-discharge openings, comprising: a print head including ink-discharge surfaces having the ink-discharge openings formed therein; a cylindrical cleaning member composed of an elastic material; a cap member for housing the cleaning member therein and for protecting the ink-discharge surfaces of the print head; cap opening/closing means for opening and closing the cap member and for moving effecting relative motion between the cleaning member and the print head ~~relative to each other~~ in accordance with the opening operation of the cap member while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces of the print head; drive control means for controlling the cap opening/closing means; and discharge control means for controlling a discharge operation of ink from the ink-discharge openings formed in the discharge surfaces, wherein, when the cap member is opened by the cap opening/closing means, by driving the cap opening/closing means with control of the drive control means so as to move effect relative motion between the cleaning member and the print head ~~relative to each other~~ while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces, ink in the ink-discharge openings is sucked, and after the moving of the cleaning member on the ink-discharge surfaces, ink is preliminarily discharged from the ink-discharge openings with control of the discharge control means.

6. (Currently Amended) An image forming apparatus for forming an image on a recording medium by discharging ink from ink-discharge openings, comprising: a print head including ink-discharge surfaces having the ink-discharge openings formed therein; a cylindrical

Appln. No. 10/617,285

Amdt. Dated April 20, 2005

Reply to Office Action of October 21, 2004

cleaning member composed of an elastic material; a cap member for housing the cleaning member therein and for protecting the ink-discharge surfaces of the print head; cap opening/closing means for opening and closing the cap member and for moving effecting relative motion between the cleaning member and the print head ~~relative to each other~~ in accordance with the opening operation of the cap member while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces of the print head; drive control means for controlling the cap opening/closing means; and discharge control means for controlling a discharge operation of ink from the ink-discharge openings formed in the discharge surfaces, wherein, when the cap member is opened by the cap opening/closing means, by performing a discharge operation of ink from the ink-discharge openings with control of the discharge control means, ink is preliminarily discharged from the ink-discharge openings.

7. (Currently Amended) An image forming apparatus for forming an image on a recording medium by discharging ink from ink-discharge openings, comprising: a print head including ink-discharge surfaces having a plurality of rows of the ink-discharge openings formed therein for a corresponding plurality of colors; a cylindrical cleaning member composed of an elastic material; a cap member for housing the cleaning member therein and for protecting the ink-discharge surfaces of the print head; cap opening/closing means for opening and closing the cap member and for moving effecting relative motion between the cleaning member and the print head ~~relative to each other~~ in the a direction orthogonal to the plurality of rows of the ink-discharge openings for the respective colors in accordance with the opening operation

Appln. No. 10/617,285
Amdt. Dated April 20, 2005
Reply to Office Action of October 21, 2004

of the cap member while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces of the print head; drive control means for controlling the cap opening/closing means; and discharge control means for controlling a discharge operation of ink from the ink-discharge openings formed in the discharge surfaces, wherein, when the cap member is opened by the cap opening/closing means, by driving the cap opening/closing means with control of the drive control means so as to ~~move~~ effect relative motion between the cleaning member and the print head ~~relative to each other~~ while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces, ink in the ink-discharge openings is sucked, and in ~~the~~ an order of the rows, over which the cleaning member passes with control of the discharge control means, of the ink-discharge openings for the corresponding colors formed in the ink-discharge surfaces, ink is preliminarily discharged from the ink-discharge openings with control of the discharge control means.

8. (Currently Amended) An image forming apparatus for forming an image on a recording medium by discharging ink from ink-discharge openings, comprising: a print head including ink-discharge surfaces having the ink-discharge openings formed therein; a cylindrical cleaning member composed of an elastic material; moving means for ~~moving~~ effecting relative motion between the cleaning member and the print head ~~relative to each other~~ while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces of the print head; drive control means for controlling the moving means; a cap member for protecting the ink-discharge surfaces of the print head; and cap opening/closing

Appln. No. 10/617,285
Amdt. Dated April 20, 2005
Reply to Office Action of October 21, 2004

means for opening and closing the cap member, wherein, when the cap member is closed by the cap opening/closing means, by driving the moving means with control of the drive control means so as to move effect relative motion between the cleaning member and the print head ~~relative to each other~~ while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces, ink in the ink-discharge openings is sucked.

9. (Currently Amended) An image forming apparatus for forming an image on a recording medium by discharging ink from ink-discharge openings, comprising: a print head including ink-discharge surfaces having the ink-discharge openings formed therein; a cylindrical cleaning member composed of an elastic material; moving means for moving effecting relative motion between the cleaning member and the print head ~~relative to each other~~ while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces of the print head; drive control means for controlling the moving means; discharge control means for controlling a discharge operation of ink from the ink-discharge openings formed in the discharge surfaces; a cap member for protecting the ink-discharge surfaces of the print head; and cap opening/closing means for opening and closing the cap member; wherein, when the cap member is closed by the cap opening/closing means, by driving the moving means with control of the drive control means so as to move effect relative motion between the cleaning member and the print head ~~relative to each other~~ while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces, ink in the ink-discharge openings is sucked, and after the moving of the cleaning member on the ink-discharge surfaces, ink is preliminarily discharged from the ink-discharge openings with

Appln. No. 10/617,285
Amdt. Dated April 20, 2005
Reply to Office Action of October 21, 2004

control of the discharge control means.

10. (Currently Amended) An image forming apparatus for forming an image on a recording medium by discharging ink from ink-discharge openings, comprising: a print head including ink-discharge surfaces having the ink-discharge openings formed therein; a cylindrical cleaning member composed of an elastic material; moving means for moving effecting relative motion between the cleaning member and the print head ~~relative to each other~~ while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces of the print head; drive control means for controlling the moving means; discharge control means for controlling a discharge operation of ink from the ink-discharge openings formed in the discharge surfaces; a cap member for protecting the ink-discharge surfaces of the print head; and cap opening/closing means for opening and closing the cap member, wherein, when the cap member is closed by the cap opening/closing means, by performing a discharge operation of ink from the ink-discharge openings with control of the discharge control means, ink is preliminarily discharged from the ink-discharge openings.

11. (Currently Amended) An image forming apparatus for forming an image on a recording medium by discharging ink from ink-discharge openings, comprising: a print head including ink-discharge surfaces having the ink-discharge openings formed therein; a cylindrical cleaning member composed of an elastic material; a cap member for housing the cleaning member therein and for protecting the ink-discharge surfaces of the print head; cap opening/closing means for opening and closing the cap member and for moving effecting

Appln. No. 10/617,285
Amdt. Dated April 20, 2005
Reply to Office Action of October 21, 2004

relative motion between the cleaning member and the print head ~~relative to each other~~ in accordance with the closing operation of the cap member while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces of the print head; and drive control means for controlling the cap opening/closing means, wherein, when the cap member is closed by the cap opening/closing means, by driving the cap opening/closing means with control of the drive control means so as to ~~move~~ effect relative motion between the cleaning member and the print head ~~relative to each other~~ while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces, ink in the ink-discharge openings is sucked.

12. (Currently Amended) An image forming apparatus for forming an image on a recording medium by discharging ink from ink-discharge openings, comprising: a print head including ink-discharge surfaces having the ink-discharge openings formed therein; a cylindrical cleaning member composed of an elastic material; a cap member for housing the cleaning member therein and for protecting the ink-discharge surfaces of the print head; cap opening/closing means for opening and closing the cap member and for ~~moving~~ effecting relative motion between the cleaning member and the print head ~~relative to each other~~ in accordance with the closing operation of the cap member while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces of the print head; drive control means for controlling the cap opening/closing means; and discharge control means for controlling a discharge operation of ink from the ink-discharge openings formed in the discharge surfaces, wherein, when the cap member is closed by the cap opening/closing

Appln. No. 10/617,285

Amdt. Dated April 20, 2005

Reply to Office Action of October 21, 2004

means, by driving the cap opening/closing means with control of the drive control means so as to ~~move~~ effect relative motion between the cleaning member and the print head ~~relative to each other~~ while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces, ink in the ink-discharge openings is sucked, and after the moving of the cleaning member on the ink-discharge surfaces, ink is preliminarily discharged from the ink-discharge openings with control of the discharge control means.

13. (Currently Amended) An image forming apparatus for forming an image on a recording medium by discharging ink from ink-discharge openings, comprising: a print head including ink-discharge surfaces having the ink-discharge openings formed therein; a cylindrical cleaning member composed of an elastic material; a cap member for housing the cleaning member therein and for protecting the ink-discharge surfaces of the print head; cap opening/closing means for opening and closing the cap member and for ~~moving~~ effecting relative motion between the cleaning member and the print head ~~relative to each other~~ in accordance with the closing operation of the cap member while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces of the print head; drive control means for controlling the cap opening/closing means; and discharge control means for controlling a discharge operation of ink from the ink-discharge openings formed in the discharge surfaces, wherein, when the cap member is closed by the cap opening/closing means, by performing a discharge operation of ink from the ink-discharge openings with control of the discharge control means, ink is preliminarily discharged from the ink-discharge openings.

Appln. No. 10/617,285

Amdt. Dated April 20, 2005

Reply to Office Action of October 21, 2004

14. (Currently Amended) An image forming apparatus for forming an image on a recording medium by discharging ink from ink-discharge openings, comprising: a print head including ink-discharge surfaces having a plurality of rows of the ink-discharge openings formed therein for a corresponding plurality of colors; a cylindrical cleaning member composed of an elastic material; a cap member for housing the cleaning member therein and for protecting the ink-discharge surfaces of the print head; cap opening/closing means for opening and closing the cap member and for moving effecting relative motion between the cleaning member and the print head relative to each other in the a direction orthogonal to the plurality of rows of the ink-discharge openings for the respective colors in accordance with the closing operation of the cap member while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces of the print head; drive control means for controlling the cap opening/closing means; and discharge control means for controlling a discharge operation of ink from the ink-discharge openings formed in the discharge surfaces, wherein, when the cap member is closed by the cap opening/closing means, by driving the cap opening/closing means with control of the drive control means so as to move effect relative motion between the cleaning member and the print head ~~relative to each other~~ while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces, ink in the ink-discharge openings is sucked, and in the an order of the rows, over which the cleaning member passes with control of the discharge control means, of the ink-discharge openings for the corresponding colors formed in the ink-discharge surfaces, ink is preliminarily discharged from the ink-discharge openings with control of the discharge control means.

Appln. No. 10/617,285
Amdt. Dated April 20, 2005
Reply to Office Action of October 21, 2004

15. (Currently Amended) The image forming apparatus according to claim 1, wherein the cap member is opened and closed when the a closing state of the cap member has continued for a predetermined time interval.

16. (Previously Presented) The image forming apparatus according to claims 1, wherein the cap member is closed after an operation of forming an image on a recording sheet.

17. (Previously Presented) The image forming apparatus according to claim 1, wherein the cap member is closed unless an image forming operation is performed for a predetermined time interval after an operation of forming an image on a recording sheet.

18. (Previously Presented) The image forming apparatus according to claim 2, wherein an ink receiver for receiving ink preliminarily discharged from the ink-discharge openings is provided in the cap member.

19. (Currently Amended) A control method of an image forming apparatus for forming an image on a recording medium by discharging ink from ink-discharge openings, the image forming apparatus comprising: a print head including ink-discharge surfaces having the ink-discharge openings formed therein; a cylindrical cleaning member composed of an elastic material; moving means for moving effecting relative motion between the cleaning member and the print head ~~relative to each other~~ while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces of the print head; drive control

Appln. No. 10/617,285

Amdt. Dated April 20, 2005

Reply to Office Action of October 21, 2004

means for controlling the moving means; a cap member for protecting the ink-discharge surfaces of the print head; and cap opening/closing means for opening and closing the cap member, the control method comprising the step of controlling the image forming apparatus such that, when the cap member is opened by the cap opening/closing means, by driving the moving means with control of the drive control means so as to ~~move~~ effect relative motion between the cleaning member and the print head ~~relative to each other~~ while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces, ink in the ink-discharge openings is sucked.

20. (Currently Amended) A control method of an image forming apparatus for forming an image on a recording medium by discharging ink from ink-discharge openings, the image forming apparatus comprising: a print head including ink-discharge surfaces having the ink-discharge openings formed therein; a cylindrical cleaning member composed of an elastic material; moving means for ~~moving~~ effecting relative motion between the cleaning member and the print head ~~relative to each other~~ while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces of the print head; drive control means for controlling the moving means; discharge control means for controlling an discharge operation of ink from the ink-discharge openings formed in the discharge surfaces; a cap member for protecting the ink-discharge surfaces of the print head; and cap opening/closing means for opening and closing the cap member, the control method comprising the step of controlling the image forming apparatus such that, when the cap member is opened by the cap opening/closing means, by driving the moving means with

Appln. No. 10/617,285
Amdt. Dated April 20, 2005
Reply to Office Action of October 21, 2004

control of the drive control means so as to ~~move~~ effect relative motion between the cleaning member and the print head ~~relative to each other~~ while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces, ink in the ink-discharge openings is sucked, and after the moving of the cleaning member on the ink-discharge surfaces, ink is preliminarily discharged from the ink-discharge openings with control of the discharge control means.

21. (Currently Amended) A control method of an image forming apparatus for forming an image on a recording medium by discharging ink from ink-discharge openings, the image forming apparatus comprising: a print head including ink-discharge surfaces having the ink-discharge openings formed therein; a cylindrical cleaning member composed of an elastic material; moving means for moving effecting relative motion between the cleaning member and the print head ~~relative to each other~~ while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces of the print head; drive control means for controlling the moving means; discharge control means for controlling an discharge operation of ink from the ink-discharge openings formed in the discharge surfaces; a cap member for protecting the ink-discharge surfaces of the print head; and cap opening/closing means for opening and closing the cap member, the control method comprising the step of controlling the image forming apparatus such that, when the cap member is opened by the cap opening/closing means, by performing a discharge operation of ink from the ink-discharge openings with control of the discharge control means, ink is preliminarily discharged from the ink-discharge openings.

Appln. No. 10/617,285
Amdt. Dated April 20, 2005
Reply to Office Action of October 21, 2004

22. (Currently Amended) A control method of an image forming apparatus for forming an image on a recording medium by discharging ink from ink-discharge openings, the image forming apparatus comprising: a print head including ink-discharge surfaces having the ink-discharge openings formed therein; a cylindrical cleaning member composed of an elastic material; a cap member for housing the cleaning member therein and for protecting the ink-discharge surfaces of the print head; cap opening/closing means for opening and closing the cap member and for moving effecting relative motion between the cleaning member and the print head ~~relative to each other~~ in accordance with the opening operation of the cap member while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces of the print head; and drive control means for controlling the cap opening/closing means; the control method comprising the step of controlling the image forming apparatus such that, when the cap member is opened by the cap opening/closing means, by driving the cap opening/closing means with control of the drive control means so as to move effect relative motion between the cleaning member and the print head ~~relative to each other~~ while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces, ink in the ink-discharge openings is sucked.

23. (Currently Amended) A control method of an image forming apparatus for forming an image on a recording medium by discharging ink from ink-discharge openings, the image forming apparatus comprising: a print head including ink-discharge surfaces having the ink-discharge openings formed therein; a cylindrical cleaning member composed of an elastic material; a cap member for housing the cleaning member therein and for protecting the ink-

Appln. No. 10/617,285

Amdt. Dated April 20, 2005

Reply to Office Action of October 21, 2004

discharge surfaces of the print head; cap opening/closing means for opening and closing the cap member and for moving effecting relative motion between the cleaning member and the print head ~~relative to each other~~ in accordance with the opening operation of the cap member while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces of the print head; drive control means for controlling the cap opening/closing means; and discharge control means for controlling an discharge operation of ink from the ink-discharge openings formed in the discharge surfaces; the control method comprising the step of controlling the image forming apparatus such that, when the cap member is opened by the cap opening/closing means, by driving the cap opening/closing means with control of the drive control means so as to move effect relative motion between the cleaning member and the print head ~~relative to each other~~ while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces, ink in the ink-discharge openings is sucked, and after the moving of the cleaning member on the ink-discharge surfaces, ink is preliminarily discharged from the ink-discharge openings with control of the discharge control means.

24. (Currently Amended) A control method of an image forming apparatus for forming an image on a recording medium by discharging ink from ink-discharge openings, the image forming apparatus comprising: a print head including ink-discharge surfaces having the ink-discharge openings formed therein; a cylindrical cleaning member composed of an elastic material; a cap member for housing the cleaning member therein and for protecting the ink-discharge surfaces of the print head; cap opening/closing means for opening and closing the

Appln. No. 10/617,285
Amdt. Dated April 20, 2005
Reply to Office Action of October 21, 2004

cap member and for moving effecting relative motion between the cleaning member and the print head ~~relative to each other~~ in accordance with the opening operation of the cap member while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces of the print head; drive control means for controlling the cap opening/closing means; and discharge control means for controlling an discharge operation of ink from the ink-discharge openings formed in the discharge surfaces, the control method comprising the step of controlling the image forming apparatus such that, when the cap member is opened by the cap opening/closing means, by performing a discharge operation of ink from the ink-discharge openings with control of the discharge control means, ink is preliminarily discharged from the ink-discharge openings.

25. (Currently Amended) A control method of an image forming apparatus for forming an image on a recording medium by discharging ink from ink-discharge openings, the image forming apparatus comprising: a print head including ink-discharge surfaces having a plurality of rows of the ink-discharge openings formed therein for a corresponding plurality of colors; a cylindrical cleaning member composed of an elastic material; a cap member for housing the cleaning member therein and for protecting the ink-discharge surfaces of the print head; cap opening/closing means for opening and closing the cap member and for moving effecting relative motion between the cleaning member and the print head ~~relative to each other~~ in the ~~a~~ direction orthogonal to the plurality of rows of the ink-discharge openings for the respective colors in accordance with the opening operation of the cap member while keeping the circumferential surface of the cleaning member in contact with the ink-discharge

Appln. No. 10/617,285

Amdt. Dated April 20, 2005

Reply to Office Action of October 21, 2004

surfaces of the print head; drive control means for controlling the cap opening/closing means; and discharge control means for controlling an discharge operation of ink from the ink-discharge openings formed in the discharge surfaces, the control method comprising the step of controlling the image forming apparatus such that, when the cap member is opened by the cap opening/closing means, by driving the cap opening/closing means with control of the drive control means so as to move effect relative motion between the cleaning member and the print head ~~relative to each other~~ while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces, ink in the ink-discharge openings is sucked, and in the an order of the rows, over which the cleaning member passes with control of the discharge control means, of the ink-discharge openings for the corresponding colors formed in the ink-discharge surfaces, ink is preliminarily discharged from the ink-discharge openings with control of the discharge control means.

26. (Currently Amended) A control method of an image forming apparatus for forming an image on a recording medium by discharging ink from ink-discharge openings, the image forming apparatus comprising: a print head including ink-discharge surfaces having the ink-discharge openings formed therein; a cylindrical cleaning member composed of an elastic material; moving means for ~~moving~~ effecting relative motion between the cleaning member and the print head ~~relative to each other~~ while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces of the print head; drive control means for controlling the moving means; a cap member for protecting the ink-discharge surfaces of the print head; and cap opening/closing means for opening and closing the cap

Appln. No. 10/617,285
Amdt. Dated April 20, 2005
Reply to Office Action of October 21, 2004

member, the control method comprising the step of controlling the image forming apparatus such that, when the cap member is closed by the cap opening/closing means, by driving the moving means with control of the drive control means so as to ~~move~~ effect relative motion between the cleaning member and the print head ~~relative to each other~~ while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces, ink in the ink-discharge openings is sucked.

27. (Currently Amended) A control method of an image forming apparatus for forming an image on a recording medium by discharging ink from ink-discharge openings, the image forming apparatus comprising: a print head including ink-discharge surfaces having the ink-discharge openings formed therein; a cylindrical cleaning member composed of an elastic material; moving means for ~~moving~~ effecting relative motion between the cleaning member and the print head ~~relative to each other~~ while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces of the print head; drive control means for controlling the moving means; discharge control means for controlling an discharge operation of ink from the ink-discharge openings formed in the discharge surfaces; a cap member for protecting the ink-discharge surfaces of the print head; and cap opening/closing means for opening and closing the cap member, the control method comprising the step of controlling the image forming apparatus such that, when the cap member is closed by the cap opening/closing means, by driving the moving means with control of the drive control means so as to ~~move~~ effect relative motion between the cleaning member and the print head ~~relative to each other~~ while keeping the circumferential surface of

Appln. No. 10/617,285
Amdt. Dated April 20, 2005
Reply to Office Action of October 21, 2004

the cleaning member in contact with the ink-discharge surfaces, ink in the ink-discharge openings is sucked, and after the moving of the cleaning member on the ink-discharge surfaces, ink is preliminarily discharged from the ink-discharge openings with control of the discharge control means.

28. (Currently Amended) A control method of an image forming apparatus for forming an image on a recording medium by discharging ink from ink-discharge openings, the image forming apparatus comprising: a print head including ink-discharge surfaces having the ink-discharge openings formed therein; a cylindrical cleaning member composed of an elastic material; moving means for ~~moving~~ effecting relative motion between the cleaning member and the print head ~~relative to each other~~ while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces of the print head; drive control means for controlling the moving means; discharge control means for controlling an discharge operation of ink from the ink-discharge openings formed in the discharge surfaces; a cap member for protecting the ink-discharge surfaces of the print head; and cap opening/closing means for opening and closing the cap member, the control method comprising the step of controlling the image forming apparatus such that, when the cap member is closed by the cap opening/closing means, by performing a discharge operation of ink from the ink-discharge openings with control of the discharge control means, ink is preliminarily discharged from the ink-discharge openings.

Appln. No. 10/617,285

Amdt. Dated April 20, 2005

Reply to Office Action of October 21, 2004

29. (Currently Amended) A control method of an image forming apparatus for forming an image on a recording medium by discharging ink from ink-discharge openings, the image forming apparatus comprising: a print head including ink-discharge surfaces having the ink-discharge openings formed therein; a cylindrical cleaning member composed of an elastic material; a cap member for housing the cleaning member therein and for protecting the ink-discharge surfaces of the print head; cap opening/closing means for opening and closing the cap member and for moving effecting relative motion between the cleaning member and the print head ~~relative to each other~~ in accordance with the closing operation of the cap member while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces of the print head; and drive control means for controlling the cap opening/closing means; the control method comprising the step of controlling the image forming apparatus such that, when the cap member is closed by the cap opening/closing means, by driving the cap opening/closing means with control of the drive control means so as to move effect relative motion between the cleaning member and the print head ~~relative to each other~~ while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces, ink in the ink-discharge openings is sucked.

30. (Currently Amended) A control method of an image forming apparatus for forming an image on a recording medium by discharging ink from ink-discharge openings, the image forming apparatus comprising: a print head including ink-discharge surfaces having the ink-discharge openings formed therein; a cylindrical cleaning member composed of an elastic material; a cap member for housing the cleaning member therein and for protecting the ink-

Appln. No. 10/617,285

Amdt. Dated April 20, 2005

Reply to Office Action of October 21, 2004

discharge surfaces of the print head; cap opening/closing means for opening and closing the cap member and for ~~moving~~ effecting relative motion between the cleaning member and the print head ~~relative to each other~~ in accordance with the closing operation of the cap member while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces of the print head; drive control means for controlling the cap opening/closing means; and discharge control means for controlling an discharge operation of ink from the ink-discharge openings formed in the discharge surfaces; the control method comprising the step of controlling the image forming apparatus such that, when the cap member is closed by the cap opening/closing means, by driving the cap opening/closing means with control of the drive control means so as to ~~move~~ effect relative motion between the cleaning member and the print head ~~relative to each other~~ while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces, ink in the ink-discharge openings is sucked, and after the moving of the cleaning member on the ink-discharge surfaces, ink is preliminarily discharged from the ink-discharge openings with control of the discharge control means.

31. (Currently Amended) A control method of an image forming apparatus for forming an image on a recording medium by discharging ink from ink-discharge openings, the image forming apparatus comprising: a print head including ink-discharge surfaces having the ink-discharge openings formed therein; a cylindrical cleaning member composed of an elastic material; a cap member for housing the cleaning member therein and for protecting the ink-discharge surfaces of the print head; cap opening/closing means for opening and closing the

Appln. No. 10/617,285

Amdt. Dated April 20, 2005

Reply to Office Action of October 21, 2004

cap member and for moving effecting relative motion between the cleaning member and the print head ~~relative to each other~~ in accordance with the closing operation of the cap member while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces of the print head; drive control means for controlling the cap opening/closing means; and discharge control means for controlling an discharge operation of ink from the ink-discharge openings formed in the discharge surfaces, the control method comprising the step of controlling the image forming apparatus such that, when the cap member is closed by the cap opening/closing means, by performing a discharge operation of ink from the ink-discharge openings with control of the discharge control means, ink is preliminarily discharged from the ink-discharge openings.

32. (Currently Amended) A control method of an image forming apparatus for forming an image on a recording medium by discharging ink from ink-discharge openings, the image forming apparatus comprising: a print head including ink-discharge surfaces having a plurality of rows of the ink-discharge openings formed therein for a corresponding plurality of colors; a cylindrical cleaning member composed of an elastic material; a cap member for housing the cleaning member therein and for protecting the ink-discharge surfaces of the print head; cap opening/closing means for opening and closing the cap member and for moving effecting relative motion between the cleaning member and the print head ~~relative to each other~~ in the a direction orthogonal to the plurality of rows of the ink-discharge openings for the respective colors in accordance with the closing operation of the cap member while keeping the circumferential surface of the cleaning member in contact with the ink-discharge

Appln. No. 10/617,285
Amdt. Dated April 20, 2005
Reply to Office Action of October 21, 2004

surfaces of the print head; drive control means for controlling the cap opening/closing means; and discharge control means for controlling an discharge operation of ink from the ink-discharge openings formed in the discharge surfaces, the control method comprising the step of controlling the image forming apparatus such that, when the cap member is closed by the cap opening/closing means, by driving the cap opening/closing means with control of the drive control means so as to move effect relative motion between the cleaning member and the print head ~~relative to each other~~ while keeping the circumferential surface of the cleaning member in contact with the ink-discharge surfaces, ink in the ink-discharge openings is sucked, and in the an order of the rows, over which the cleaning member passes with control of the discharge control means, of the ink-discharge openings for the corresponding colors formed in the ink-discharge surfaces, ink is preliminarily discharged from the ink-discharge openings with control of the discharge control means.

33. (Previously Presented) The control method of an image forming apparatus according to claim 19, wherein the cap member is opened and closed when the closing state of the cap member has continued for a predetermined time interval.

34. (Previously Presented) The control method of an image forming apparatus according to claim 19, wherein the cap member is closed after an operation of forming an image on a recording sheet.

Appln. No. 10/617,285

Amdt. Dated April 20, 2005

Reply to Office Action of October 21, 2004

35. (Previously Presented) The control method of an image forming apparatus according to claim 19, wherein the cap member is closed unless an image forming operation is performed for a predetermined time interval after an operation of forming an image on a recording sheet.